

First Circular

With great pleasure we announce the first circular for the international conference **The Structure and Signals of Neutron Stars, from Birth to Death**, to be held in Florence, Italy from March 24-28, 2014. The conference is affiliated with a six week workshop of the same title to be held at the Galileo Galilei Institute, also in Florence, from March 10-April 18, 2014.

The study of neutron stars represents an active field of both observational and theoretical research, requiring the expertise of scientists across a range of disciplines, including astrophysics, nuclear and particle physics and Gravitational Wave (GW) physics. A conference dedicated to all facets of neutron stars is particularly relevant at this moment, given recent advances such as

- The discovery of massive neutron stars, which has placed new constraints on the equation of state (EoS) of dense matter.
- Observations of cooling of the young NS in Cas A, hinting at a transition to neutron superfluidity.
- Gravitational wave interferometers LIGO and Virgo being upgraded to advanced sensitivity, and starting to take data as soon as 2015.
- New observations challenging models for Gamma Ray Bursts and their central engines. New observations of core collapse supernovae, showing an unexpected diversity in their explosion mechanisms.
- New lab experiments testing matter at high density and temperature that will start taking data in 2015 (NICA - Dubna).
- The discovery of a magnetar near the Galactic center.

This conference aims to bring together astronomers from across the electromagnetic and GW spectrum who are interested in observations that can constrain the neutron star EoS, as well as nuclear physicists interested in the behavior of matter at high densities. The goal is to explore what has been learned from current observations, what we expect to learn from future facilities, and what exploratory studies are still required to prepare the ground for these facilities.

This circular provides information on the scientific program, registration, abstract submission, accommodation, and financial support. This and additional information is available on the **conference website**:

<http://indico.cern.ch/e/NS2014>

We look forward to seeing you in Florence!

The organizing committee,

Fiorella Burgio
Alessandro Drago
Ian Jones
Brian Metzger
Pierre Pizzochero
Anna Watts

Important Dates

Registration, abstract submission, and request for financial support are now open with the following deadlines:

31 Oct. 2013: Conference Registration, Request of Support Deadline

30 Nov. 2013: Abstract Deadline

1 Feb. 2014: Abstract and Support Notification

24 March 2014: Start of the Conference

Scientific Program

The following series of topics will be covered during the conference:

- Equation of state of dense matter, including hyperon, kaon and quark degrees of freedom
- Neutrino emission and cooling of compact stars
- Constraints on neutron star properties from astrophysical observations
- r -Process Nucleosynthesis
- Explosive transients from neutron star birth and death, including supernovae and gamma-ray bursts
- Gravitational wave emission from neutron stars
- Magnetars: theory and observations

Invited Speakers ([†]confirmed)

- Mark Alford (St. Louis University, USA)[†]
- Almudena Arcones (TU/GSI Darmstadt, Germany)[†]
- Andrei Beloborodov (Columbia University, USA)[†]
- Edo Berger (Harvard, USA)[†]
- Nicholas Chamel (Universit Libre de Bruxelles, Belgium)[†]
- Deepto Chakrabarty (MIT, USA)[†]
- Pawel Danielewicz (Michigan State University, USA)[†]
- Jurgen Schaffner-Bielich (University of Frankfurt, Germany)[†]
- Hans-Thomas Janka (Max Planck Munich, Germany)[†]
- Alice Harding (NASA, USA)[†]
- Craig Heinke (University of Alberta, Canada)
- Tanya Hinderer (Caltech, USA)[†]
- Andrew Melatos (University of Melbourne, Australia)
- Christian Ott (Caltech, USA)[†]

- Benjamin Owen (Penn State, USA)
- Dany Page (UNAM, Mexico)[†]
- Elena Pian (INAF, Italy)[†]
- Robert Pisarski (Brookhaven National Lab, USA)[†]
- Jose Pons (University of Alicante, Spain)[†]
- Hans-Josef Schulze (INFN Catania, Italy)[†]
- Scott Ransom (NRAO, USA)
- Friedrich Röpke (University of Wurzburg, Germany)[†]
- Peter Senger (GSI Darmstadt)[†]
- Kohsuke Sumiyoshi (Numazu College of Technology, Japan)[†]
- Enrico Ramirez-Ruiz (UC Santa Cruz, USA)[†]
- Nanda Rea (University of Barcelona, Spain)[†]
- Dmitry Yakovlev (Joffe Institute, Russia)[†]

Venue

The conference will be held at the **Auditorium al Duomo**,
Via de' Cerretani, 54r - 50123 Firenze - Italia - Tel. 055/2381752 - Fax 055/268308,
E-mail: info@auditoriumalduomo.com

The Auditorium is located in the vibrant center of Florence, which can easily be reached by public transportation (bus or metro). Close to the venue are various other hotels, restaurants, and shopping centers. Coffee breaks are provided, but participants will be responsible for lunch and dinner (there are many restaurants withing walking distance of the conference venue).

Registration

Registration is now open via the webpage link. At the time of registration, no registration fee is due. A registration fee may be requested and due at another date TBD. We are currently inquiring into sources of external funding that would cover the registration fee.

Accompanying persons wishing to participate in conference activities are welcome. They will be charged an extra fee TBD.

Those planning to participate in the longer-term workshop, please apply by filling out the form at the GGI workshop:

<http://www.ggi.fi.infn.it/index.php?p=workshops.inc&id=120>

Abstract Submission

Abstract submission is now open via the website. Participants are encouraged to submit an Abstract of relevant work. Submissions will be reviewed and assigned as oral or poster contributions. The deadline for abstract submission is **November 30, 2013**.

Financial Support

The Organizing Committee encourages the participation of young scientists, in particular PhD students and starting postdocs working on topics relevance to the conference and workshop. Please submit your request for financial support to the organizers at the email: drago@fe.infn.it, including the following information

- Application letter including the following details: Name, institution, occupation, and reason for applying
- Students should include a CV

Preference will be given to applicants who have submitted an abstract. Results of the request will be sent by February 1, 2014.

Accommodation

Conference participants are responsible for making their own hotel accommodations in Florence. A list of suggested hotels within walking distance of the conference venue is given on the conference website: <http://indico.cern.ch/e/NS2014>. A limited number of rooms have been reserved for conference participants at a reduced price. We highly advise early booking since March is a busy season in Florence and hotels fill up fast.

Social Program

A welcome reception and conference dinner will be organized. Conference excursions are currently planned for participants and accompanying persons.